

VS Id#	Vital Sign Category			Vital Sign	Network Rank	PUHE
H17	Management Zones			Wilderness Areas - HAVO, HALE, other Unofficial	1.1	
P34	Geology	Hazards		Volcanic Unrest - Ground Deformation	1.4	
P35	Geology	Hazards		Volcanic Unrest - Lava Flows	1.2	
P37	Geology	Hazards		Seismicity of Volcanic Origin	1.8	
P41	Geology	Landforms		Permafrost on Big Island summits	0.0	
T41	Terrestrial Ecosystems	Cave Systems	Community	Cave & lava tube communities	2.0	
H07	Park Use & Activities			Litter/debris	3.1	4.6
P12	Soil, Water, & Nutrient Dynamics			Soil Erosion	2.9	4.6
T04	Terrestrial Ecosystems	Vegetation	Landscape	Fire Effects & Dynamics: Vegetation and Landscape Level	2.5	4.0
T08	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Alien Plant Control	3.5	4.0
T16	Terrestrial Ecosystems	Vegetation	Population	Established Alien Species - Plants	4.0	4.0
T17	Terrestrial Ecosystems	Vegetation	Population	Alien Incipient Invasive Plants	3.7	4.0
P17	Soil, Water, & Nutrient Dynamics			Flowing surface water hydrology	2.7	3.9
T13	Terrestrial Ecosystems	Vegetation	Population	Native Plant Species Protection (T, E, S-o-C species)	4.0	3.8
M24	Marine Ecosystems	Intertidal	Community	Intertidal - Soft Bottom (sand beach, mudflat, mangrove)	2.6	3.6
P18	Soil, Water, & Nutrient Dynamics			Wetlands (incl. anachaline pools) hydrology	3.2	3.6
T14	Terrestrial Ecosystems	Vegetation	Population	Established Plant Disease & Pathogens	2.9	3.6
T20	Terrestrial Ecosystems	Consumers	Community	Recovery/Change of Native Invertebrates Communities with Native Plant Restoration	2.5	3.6
T39	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Terrestrial Invertebrates	2.2	3.6
H04	Land Use			Alien Invasive Species Points of Entry	3.4	3.3
T37	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Predatory Terrestrial Vertebrate	3.3	3.3
M06	Marine Ecosystems	Benthic	Population	Benthic Reef Fisheries / Collected species (inverts: sea cucumbers, pololo worm, corals; etc)	2.7	3.2
F5	Freshwater Ecosystems	Consumers	Population	Established Alien Species - Predatory Freshwater (vertebrate and invertebrate)	2.9	3.0
F6	Freshwater Ecosystems	Consumers	Population	Alien Incipient Invasives - Predatory Freshwater (vertebrate and invertebrate)	2.8	3.0
H02	Viewscapes / Lightscapes			Viewsheds	2.7	3.0
H06	Land Use			Land Use(s) Within & Surrounding Parks	3.4	3.0
H16	Management Zones			Management Zone uses	3.1	3.0
M02	Marine Ecosystems	Benthic	Landscape	Benthic Habitats	2.6	3.0
M03	Marine Ecosystems	Benthic	Community	Benthic Marine Invertebrates and Algae Biodiversity	2.8	3.0
M07	Marine Ecosystems	Benthic	Population	Benthic Marine Invertebrates and Algae	2.7	3.0
M10	Marine Ecosystems	Benthic	Population	Alien Incipient Coral Disease & Pathogens	2.5	3.0
M11	Marine Ecosystems	Benthic	Population	Established Alien Species - Benthic Marine	2.7	3.0
P01	Climate & Air Quality			Visibility	2.9	3.0
P08	Climate & Air Quality			Extreme events (weather & ocean)	3.0	3.0
P26	Water Quality			Ground Water Quality - Microbiology	2.9	3.0
P32	Water Quality			Marine Water Quality - macroinvertebrates	2.8	3.0
T06	Terrestrial Ecosystems	Vegetation	Community	Terrestrial Plant Biodiversity	3.6	3.0
T07	Terrestrial Ecosystems	Vegetation	Community	Long-term Plant Succession	3.5	3.0
T15	Terrestrial Ecosystems	Vegetation	Population	Alien Incipient Plant Disease & Pathogens	2.6	3.0
T19	Terrestrial Ecosystems	Consumers	Community	Terrestrial Vertebrate (including off-shore islets refugia) Biodiversity	3.3	3.0
T33	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Invasive Terrestrial Invertebrate Pests of natural systems	2.4	3.0
H09	Park Use & Activities			Footprint & Visitor Use Patterns	3.3	2.8
H13	Park Use & Activities			Culturally Significant Plant Harvest	2.5	2.8
H14	Park Use & Activities			Culturally Significant Vertebrate Species Harvest	1.6	2.8
M12	Marine Ecosystems	Benthic	Population	Alien Incipient Invasives - Benthic Marine	2.8	2.8
P36	Geology	Hazards		Seismicity of Non-Volcanic Origin	1.9	2.8
P39	Geology	Landforms		Coastal Shoreline Change (erosion & accretion)	3.2	2.8
T26	Terrestrial Ecosystems	Consumers	Population	Seabirds (including T & E spp.)	3.5	2.8
T27	Terrestrial Ecosystems	Consumers	Population	Shorebirds and Waterbirds (including T & E spp.)	3.3	2.8
F1	Freshwater Ecosystems	Producers		Community dynamics of primary producers	2.5	2.6
F2	Freshwater Ecosystems	Consumers	Community	Aquatic and Riparian Species (vertebrate and invertebrate) Biodiversity	3.5	2.6
H05	Land Use			Water Use(s) Within & Surrounding Parks	3.0	2.6
M13	Marine Ecosystems	Water column (motile)	Community	Water Column Marine Vertebrates and Invertebrates Biodiversity	2.8	2.6
M14	Marine Ecosystems	Water column (motile)	Population	Water Column Reef Fisheries	2.2	2.6
M17	Marine Ecosystems	Water column (motile)	Population	Established Alien Species - Water Column Marine	2.5	2.6
M18	Marine Ecosystems	Water column (motile)	Population	Water Column Marine Invertebrates	2.8	2.6
M20	Marine Ecosystems	Water column (motile)	Population	Marine Species Protection (T, E, S-o-C species)	3.3	2.6
M21	Marine Ecosystems	Water column (motile)	Population	Alien Incipient Invasives - Water Column Marine	2.1	2.6
M22	Marine Ecosystems	Intertidal	Community	Intertidal Biodiversity - Vertebrates, Invertebrates, and Algae	3.1	2.6
M25	Marine Ecosystems	Intertidal	Population	Intertidal Reef Fisheries / Collected species (limu, opahi, crabs, fish, etc.)	2.3	2.6
M27	Marine Ecosystems	Intertidal	Population	Established Alien Species - Intertidal Marine	2.5	2.6
M28	Marine Ecosystems	Intertidal	Population	Alien Incipient Invasives - Intertidal Marine	2.6	2.6
P27	Water Quality			Marine Water Quality - Microbiology	2.8	2.6
P31	Water Quality			Surface Water Quality - Toxics & contaminants	3.7	2.6
T35	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Terrestrial Invertebrate Pests (agricultural)	1.8	2.6
H01	Soundscapes			Alien, Natural, Human Soundscapes	2.6	2.3
H12	Park Use & Activities			Coral/Sand Mining Harvest	1.2	2.3
P07	Climate & Air Quality			Weather & Climate	3.4	2.3
P19	Soil, Water, & Nutrient Dynamics			Groundwater dynamics	2.4	2.3
T29	Terrestrial Ecosystems	Consumers	Population	Terrestrial Invertebrate Species Protection (T, E, S-o-C Species)	2.9	2.3
F3	Freshwater Ecosystems	Consumers	Population	Freshwater Animals Disease & Pathogen	2.2	2.0
F4	Freshwater Ecosystems	Consumers	Population	Amphidromous Fauna Size-Age Structure, Reproduction and Recruitment	2.1	2.0
H08	Park Use & Activities			Marine Recreational Activities & Groundings/Anchor Damage	2.5	2.0
H11	Park Use & Activities			Bio-prospecting Harvest	1.9	2.0
H15	Park Use & Activities			Reef Fisheries Harvest	2.6	2.0
M01	Marine Ecosystems	Benthic	Landscape	Coral Growth (erosion & accretion)	2.7	2.0
M08	Marine Ecosystems	Benthic	Population	Coral Growth/Size and Age Structure, and Recruitment	2.6	2.0
M15	Marine Ecosystems	Water column (motile)	Population	Established Marine Animal (other than turtles) Disease & Pathogens	1.9	2.0
M19	Marine Ecosystems	Water column (motile)	Population	Fish Growth/Size and Age Structure, and Recruitment	3.2	2.0
M26	Marine Ecosystems	Intertidal	Population	Intertidal Marine Invertebrates, Fish, and Algae	3.0	2.0
P06	Climate & Air Quality			Solar radiation	2.7	2.0
P16	Soil, Water, & Nutrient Dynamics			Soil Crust Change (Arid-Semiarid habitats)	0.9	2.0
P21	Water Quality			Marine Water Quality Core parameters	3.3	2.0
P22	Water Quality			Surface Water Quality Core parameters	3.6	2.0
P24	Water Quality			Marine Water Quality Supplemental parameters	2.9	2.0
P25	Water Quality			Surface Water Quality Supplemental parameters	3.5	2.0
P28	Water Quality			Surface Water Quality - Microbiology	2.9	2.0
P30	Water Quality			Marine Water Quality - Toxics & contaminants	3.0	2.0
P33	Water Quality			Surface Water Quality - macroinvertebrates	2.6	2.0
P38	Geology	Hazards		Mass Geologic Wasting	1.6	2.0
P40	Geology	Landforms		Dune Change (erosion & accretion)	0.9	2.0
P43	Geology	Landforms		Cave Geology: non-karst	2.2	2.0
T01	Terrestrial Ecosystems	Vegetation	Landscape	Soil and Pollen Landscape History	2.3	2.0
T03	Terrestrial Ecosystems	Vegetation	Landscape	Landscape Fragments, Patch Size, Land Cover	2.6	2.0
T05	Terrestrial Ecosystems	Vegetation	Landscape	Forest Dieback	1.5	2.0
T09	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Feral Ungulate Control	2.4	2.0
T11	Terrestrial Ecosystems	Vegetation	Population	Invertebrate Biocontrol of Plants	1.7	2.0
T12	Terrestrial Ecosystems	Vegetation	Population	Plant Pathogen Biocontrol of Plants	1.6	2.0
T18	Terrestrial Ecosystems	Consumers	Community	Terrestrial Invertebrate Biodiversity	2.9	2.0

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T22	Terrestrial Ecosystems	Consumers	Population	Invertebrate Biocontrol of Invertebrates	1.7	2.0
T25	Terrestrial Ecosystems	Consumers	Population	Invertebrate Charismatic or Species of Concern	3.2	2.0
T28	Terrestrial Ecosystems	Consumers	Population	Terrestrial Invertebrates Associated with Habitat Quality	2.7	2.0
T31	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Disease & Pathogens of Terrestrial Vertebrates	2.5	2.0
T34	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Predatory Terrestrial Vertebrates	3.4	2.0
T36	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Terrestrial Invertebrate Pests (human structures)	1.9	2.0
H10	Park Use & Activities			Subsistence Farming/Agriculture	1.2	1.0
M04	Marine Ecosystems	Benthic	Community	Subtidal - Hard Bottom (coral reef, colonized basalt, etc.)	2.7	1.0
M05	Marine Ecosystems	Benthic	Community	Subtidal - Soft Bottom (sand flat, seagrass bed)	2.4	1.0
M09	Marine Ecosystems	Benthic	Population	Established Coral Disease & Pathogens (including bleaching)	2.4	1.0
M16	Marine Ecosystems	Water column (motile)	Population	Established Turtle Disease & Pathogens	2.9	1.0
M23	Marine Ecosystems	Intertidal	Community	Intertidal - Hard Bottom	2.2	1.0
P02	Climate & Air Quality			Atmospheric Deposition: Wet (direct & occult) and Dry	2.1	1.0
P03	Climate & Air Quality			Atmospheric Gases: Climate Change Indicators, Human Pollutants, Natural-Volcanic	2.2	1.0
P04	Climate & Air Quality			Marine Aerosols	1.4	1.0
P05	Climate & Air Quality			Atmospheric Particulates: Climate Change Indicators, Human Pollutants, Natural-Volcanic	2.2	1.0
P09	Climate & Air Quality			Climate Representations - 2- & 3- dimensional	1.7	1.0
P10	Soil, Water, & Nutrient Dynamics			Ocean/Physical Dynamics: Currents, Sea Level, Tides/Swell	2.7	1.0
P11	Soil, Water, & Nutrient Dynamics			Biogeochemical Cycles - Nutrient Cycling	2.5	1.0
P15	Soil, Water, & Nutrient Dynamics			Soil Quality- Physical	2.3	1.0
T02	Terrestrial Ecosystems	Vegetation	Landscape	Ecozone Boundaries	2.1	1.0
T10	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Invasive Alien Invertebrate Control	1.8	1.0
T24	Terrestrial Ecosystems	Consumers	Population	Herps (native)	1.7	1.0
T30	Terrestrial Ecosystems	Consumers	Population	Established Disease & Pathogens of Terrestrial Vertebrates	2.5	1.0
T32	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Feral Ungulates	2.4	1.0
T38	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Fungi	2.0	1.0
T40	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Vertebrates	2.6	1.0
H03	Viewscapes / Lightscapes			Lightscape & Night sky	2.7	0.0
P13	Soil, Water, & Nutrient Dynamics			Soil Quality - Biological	1.7	0.0
P14	Soil, Water, & Nutrient Dynamics			Soil Quality- Chemical	1.9	0.0
P20	Water Quality			Ground Water Quality Core parameters	2.8	0.0
P23	Water Quality			Ground Water Quality Supplemental parameters	2.6	0.0
P29	Water Quality			Ground Water Quality - Toxics & contaminants	2.8	0.0
P42	Geology	Landforms		Cave Environmental conditions	2.0	0.0
P44	Geology	Landforms		Cave Geology: karst	0.9	0.0
T21	Terrestrial Ecosystems	Consumers	Community	Recovery/change of Native Wildlife and habitats (including wetlands) with restoration of native vegetation	3.2	0.0
T23	Terrestrial Ecosystems	Consumers	Population	Forest Birds and Bats (includes T & E spp.)	3.1	0.0